

LOW POWER MODULATING BOILER

A new gas technology for a still better energy efficiency

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CS5.2 : WOC 5 Domestic & Commercial Utilization



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Regulation is the key driver of innovation: RT 2012 for new house is the challenge to win ...

OBJECTIVES OF PRIMARY ENERGY

PRIMARY ENERGY (KWHEP/M².YEAR) REPARTITION IN FRANCE	HOUSES BEFORE 2008	RT 2012 EXISTING HOUSE LOW CONSUMPTION	RT 2012 NEW HOUSE LOW CONSUMPTION	POSITIVE ENERGY HOUSE AVERAGE
HEATING	142	± 40	± 15	< 10
HOT WATER	21	±25	±25	±15
COLD	12	±15	±10	<10
LIGHTING				
ELECTRICAL AUXILIARY	30			
INTERNET & COMPUTERS	75	75	60	60 ↘
WASHING - MACHINES				
TOTAL Consumptions	± 205	80	50	0

Energy efficiency for buildings



ISOLATION



RENEWABLE



**EFFICIENT
TECHNOLOGY**



**GREEN
LABEL**

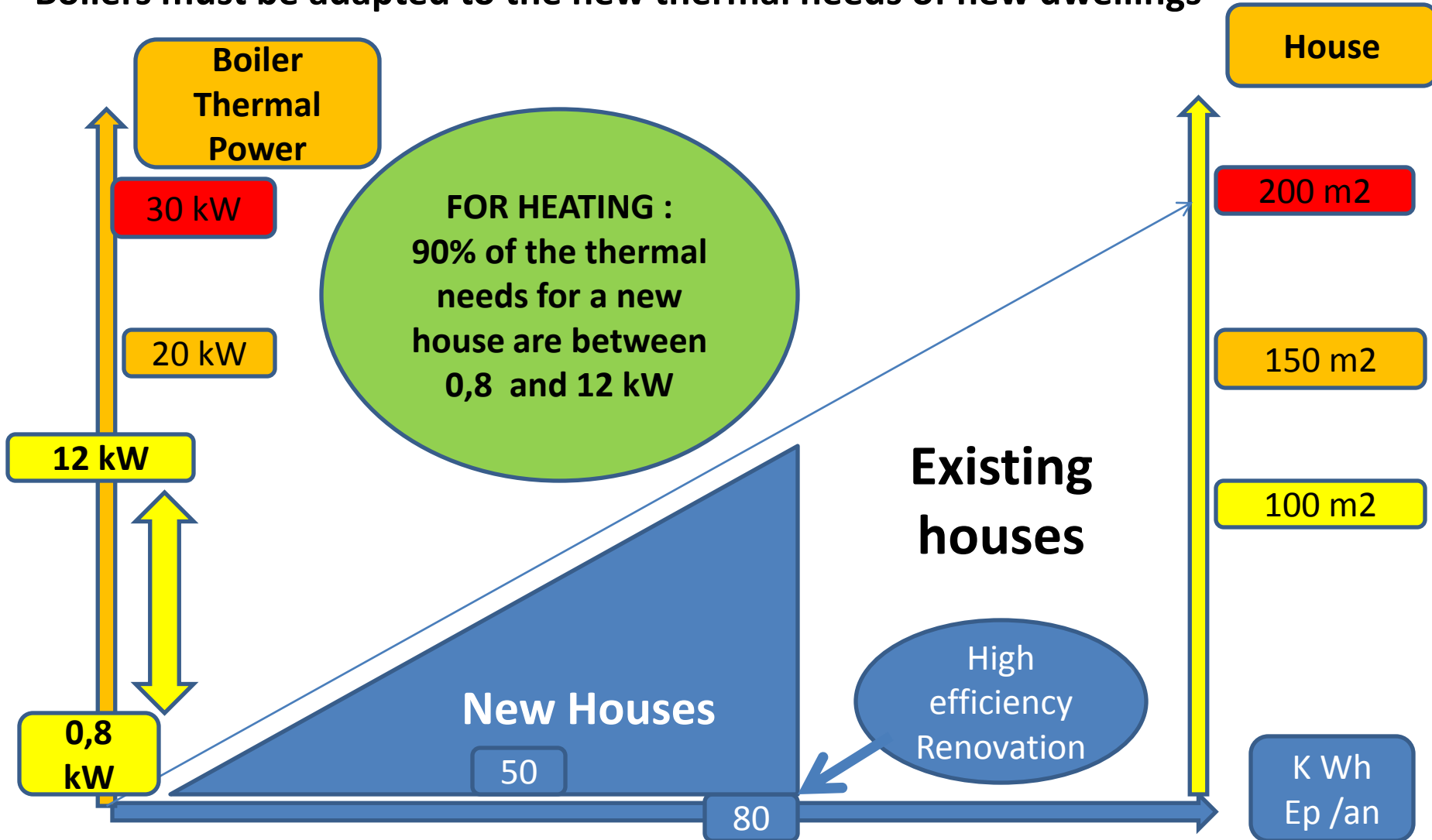
REACHING THE TARGET OF 50 kWh EP/m².year REQUIERES :

- High level of isolation
- Renewable energy : solar photo voltaic or solar thermal
- Efficient gas technologies
- And, at the end,, a solution as cheapest as possible !!!!

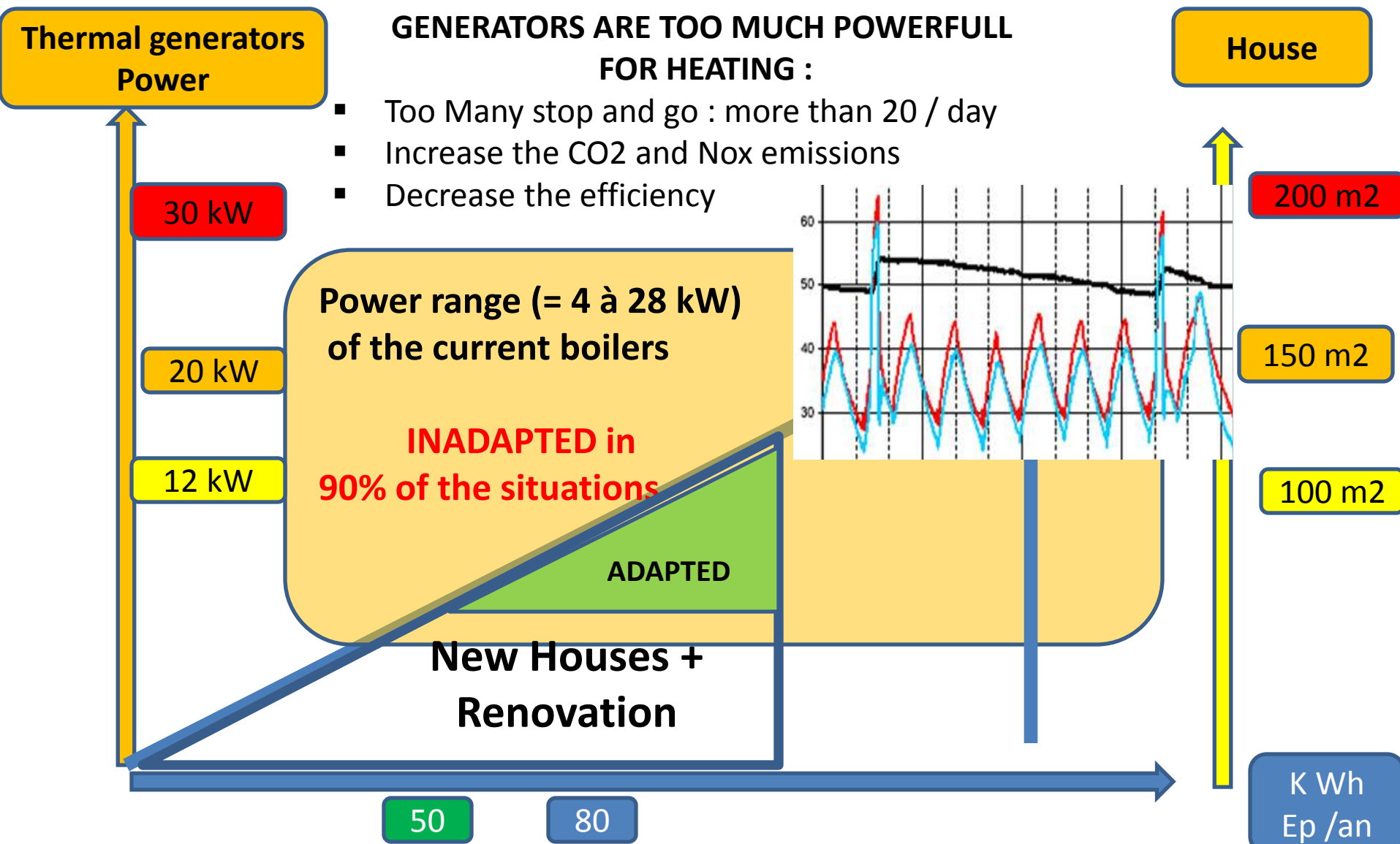


Gas Boilers and new dwellings

Boilers must be adapted to the new thermal needs of new dwellings

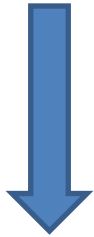


The current gas technologies are not adapted ... IN HEATING MODE !



How GDF SUEZ created a new gas boiler ?

From the idea to the product ...



2 years later !!



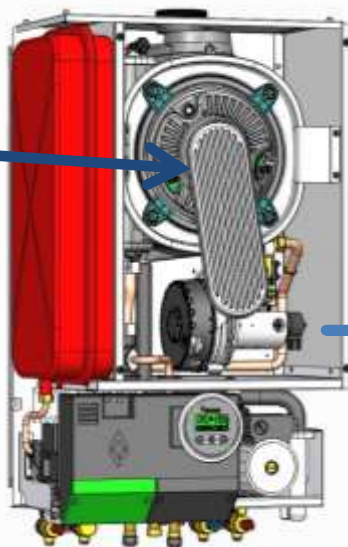
Innovation is transforming an idea into reality to acquire a competitive advantage

- **What are the rules** to reach the efficiency regarding the law ?
- **Technology Watch :**
 - which technologies are adapted to the new context ?
 - Which partners and manufacturers are able to reach this targets ?
- **GDF SUEZ SPECIFICATIONS**
 - To reach 0,8 kW in less than 10 seconds / To modulate in real time
 - To cover 90% of the heat demand of new houses Market = 12 kW
 - Easy to install and to maintain
- **Find an good industrial partner**
- **Co-Develop the new product** : from the patent to the target price
- **Test the product** : laboratory tests and field tests
- **Certificate the product**
- **Commercialize the product**

The Low Power Modulating Boiler : From 0,8 to 12 kW



Low NOx
Burner



Specifications :

- Dimensions : 450 x 750 x 260 mm (very narrow)
- Weight : 25 kg Power : 0,8 to 12 kW

EFFICIENCY :

- **Full Power** = 12 kW (30°C / 50°C) = **109,2 %**
- **30 % of full Power** = 3,8 kW (30°C / 50°C) = **108,3 %**
- **Minimum Power** = 0,8 kW (30°C / 50°C) = **107,9 %**



New technology
which allows to
modulate from 1 to
40 at constant
efficiency



Official French Certification

Next steps : from 0,8 – 12 kW

... To 0,8 - 28 kW = High Modulation Boiler



A boiler new gas boiler which :

- Is adapted to the existing house : 28 kW
- Is adapted to renovation : 200 => 80 kWh EP / m2.year
- Optimizes thermal solar production => 4 - 2 m2

- Modulates from 0,8 to 28 kW
- Modulates in real time
- Modulate at constant efficiency : 108 - 109 %
- Is Low Nox (classe 5 = Blue Angel)

- As been certificated in June 2012
- Will be tested in September 2012
 - In France
 - In Japan with Osaka Gas
- Will be commercialized in January 2013



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THANK YOU FOR YOUR ATTENTION

When Innovation reaches the Market : gas wins market shares !

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